

REMARKS

Prior to entry of this amendment, claims 6-10, 12 and 14-21 are currently pending in the subject application. Claim 7 has been incorporated into claim 6, and claims 7 and 19 have been canceled. Claims 8 and 9 have been amended to correct for antecedent basis. Claim 12 has been amended to be directed to a single statutory class. Claims 6 and 12 are independent.

Applicants appreciate the Examiner's acknowledgement of applicants' claim for foreign priority and receipt of a certified copy of the priority document in the parent application.

Applicants request the Examiner, in connection with the next Office action, to indicate the acceptability of the drawings filed on October 16, 2003.

A.. Introduction

In the outstanding Office action, the Examiner rejected claims 6, 12, 15 and 18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,871,417 to Nishizawa et al. (hereinafter "the Nishizawa et al. reference"), rejected claims 6, 10, 12, 14, 17 and 20-21 under 35 U.S.C. § 102(b) as being anticipated by WO-99/16109 to Mertens et al. (hereinafter "the Mertens et al. reference"), and rejected claims 7-10, 14, 16-17 and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over the Nishizawa et al. reference in view of U.S. Patent No. 6,178,973 to Franca et al. (hereinafter "the Franca et al. reference").

B. Asserted Anticipation Rejection of Claims 6, 12, 15 and 18

In the outstanding Office action, the Examiner rejected claims 6, 12, 15 and 18 under 35 U.S.C. § 102(b) as being anticipated by the Nishizawa et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

Claim 6 recites, in part "a light source for heating the wafer and the cleaning solution during cleaning of the wafer." Claim 12 recites, in part, cleaning a wafer by "heating the wafer and the cleaning solution by a light source." Since the Nishizawa et al. reference fails to disclose

that the UV light source heats the wafer and the solution, the only way for the Examiner to maintain this rejection is by asserting that the UV light *inherently* heats the wafer and solution. However, in the outstanding Office action the Examiner did not provide any evidence to support such an inherency argument. Further, applicants note that, to support an inherency argument, the evidence must do more than merely suggest a possibility that the UV light source heats the solution and the wafer.

In order to support an inherency argument, the fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient. (MPEP § 2112, citing *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993)). Rather, the Examiner must present evidence that makes clear that the missing descriptive matter is *necessarily* present. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. (MPEP § 2112, citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)). However, the Nishizawa et al. reference does not provide necessary support for alleging that the bottom electrode inherently heats the wafer and solution, as the UV light may serve a variety of functions.

For example, it is well known in the art that UV light may be used to photo-assist etching of a semiconductor. The mechanism for such photoenhanced etching involves the creation of electron-hole pairs, the subsequent oxidative dissociation of the semiconductor into its component elements (a reaction that consumes the photo-generated holes) and the reduction of the oxidizing agent in the solution by reaction with the photo-generated electrons. This example is completely consistent with the description of the Nishizawa et al. reference, in which the UV light is used to activate the interior surfaces of the trenches. Accordingly, there is no support for the proposition that the UV light *necessarily* heats the wafer and the solution during the cleaning of the wafer, as recited in claims 6 and 12.

Therefore, it is respectfully submitted that the Nishizawa et al. reference fails to disclose or suggest the present invention as recited in claim 6. The remaining rejected claims depend from respective ones of claims 6 and 12, and are similarly believed to be allowable. Therefore, it is respectfully requested that this rejection be withdrawn.

Further, limitations of claim 7 have been incorporated into claim 6, thereby obviating the rejection of claim 6 as being anticipated by the Nishizawa et al. reference.

C. Asserted Anticipation Rejection of Claims 6, 10, 12, 14, 17 and 20-21

In the outstanding Office action, the Examiner rejected claims 6, 10, 12, 14, 17 and 20-21 under 35 U.S.C. § 102(b) as being anticipated by the Mertens et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

Claim 6 recites, in part “a light source for heating the wafer **and** the cleaning solution during cleaning of the wafer.” Claim 12 recites, in part, cleaning a wafer by “heating the wafer **and** the cleaning solution by a light source.” While the Mertens et al. reference may teach a light source heating a solution, it is respectfully submitted that the Mertens et al. reference fails to disclose or suggest the heating of the wafer **and** the solution during cleaning of the wafer, as recited in claims 6 and 12.

Therefore, it is respectfully submitted that claims 6 and 12 define the present invention over the Mertens et al. reference. The remaining rejected claims depend variously from claims 6 and 12, and are similarly believed to be allowable. Therefore, it is respectfully requested that this rejection be withdrawn.

Further, limitations of claim 7 have been incorporated into claim 6, thereby obviating the rejection of claim 6 as being anticipated by the Mertens et al. reference.

D. Asserted Obviousness Rejection of Claims 7-10, 14, 16-17 and 19-21

In the outstanding Office action, the Examiner rejected claims 7-10, 14, 16-17, and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over the Nishizawa et al. reference in view of the Franca et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

The Franca et al. reference fails to provide the teachings noted above as missing from the Nishizawa et al. reference. Therefore, it is respectfully submitted that claims 7-10, 14, 16-17 and 19-21, which variously depend, either directly or indirectly from claims 6 and 12, are similarly believed to be allowable.

Further, limitations of claim 7 have been incorporated into claim 6, from which claims 8-10 and 20-21 depend. Claim 6 now recites, in part, "an antipollution plate mounted on a lower part of the focusing lens for preventing the focusing lens from being polluted by the cleaning solution." The Nishizawa et al. reference fails to disclose a lens or an antipollution plate, as now recited in claim 6. While the Franca et al. reference may disclose a quartz window 52, this quartz window is on an ozone generation chamber 12 in which the optical condensing means is located. The quartz window is used correct for aberration introduced by the optical condensing means. While, as shown in FIG. 1A of the Franca et al. reference, a quartz window 7 may be between the optical condensing means and a work surface 6, since the light is to be focused within the ozone generating chamber itself, the quartz window clearly cannot protect the optical condensing means from the ozone. Finally, the Franca et al. reference is directed to an apparatus for ozone generation, and does not provide any solution, i.e., a chemical substance dissolved in a liquid, from which the quartz window can protect the optical condensing means. Thus, it is respectfully submitted that claim 6 now further defines the present invention over the combination of the Nishizawa et al. reference and the Franca et al. reference

Therefore, it is respectfully requested that this rejection be withdrawn.

E. Entry of Amendment Requested

Entry of the above amendment after final is respectfully requested. The amendments to the claims merely correct for informalities as noted above or incorporate limitations from previously dependent claims. Therefore, the above amendment reduces issues, and consideration thereof does not impose an undue burden on the Examiner.

F. Conclusion

Since the cited prior art references neither anticipate nor render obvious the subject invention as presently claimed, applicants respectfully submit that claims 6-10, 12 and 14-21 are now in condition for allowance, and a notice to that effect is respectfully requested.

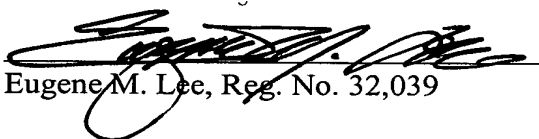
If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

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